

REMARKS

In the non-final office action mailed July 3, 2006, claims 1-35 were pending and stand rejected. No amendments to the claims have been made. A declaration of the inventors accompanies this response (the "Declaration"). Reconsideration of the present application in view of the remarks that follow is respectfully requested.

Claim Rejections

Claims 1-16, 18-24, 26-30, and 32-35 were rejected under 35 USC §102(e) as being anticipated by U.S. Published Application No. 2004/0091120 to Kantor et al. (hereinafter "Kantor"). Claims 1-16, 18-24, and 26-30 were rejected under 35 USC §102(e) as being anticipated by U.S. Published Application No. 2003/0099365 to Karjalainen et al. (hereinafter "Karjalainen"). Claims 17, 25, and 31 were rejected under 35 USC § 103(a) as being unpatentable over Kantor. Finally, claims 17, 25, and 31 were rejected under 35 USC § 103(a) as being unpatentable over Karjalainen.

Rule 1.131 Declaration

Grounds of rejection asserted against claims 1-35 of the present application are based on Kantor and Karjalainen, which are being asserted as anticipatory of some claims and as the primary references against others in an obviousness context. The Declaration enclosed herewith is submitted in accordance with 37 CFR §1.131. The effective date of the Kantor reference is November 12, 2002. The effective date for consideration of Karjalainen under 35 U.S.C. §102(e) is November 14, 2002. The present application claims priority to U.S. Provisional Patent Application No. 60/466,133 which was filed on April 28, 2003 (the "Provisional Application"). As established by the enclosed Declaration, the inventors conceived of the inventions defined by claims 1-35 at least as

early as October 2002. Furthermore, the Declaration and its exhibits establish substantially continuous efforts to prepare and file the Provisional Application from a time before the filing of the Kantor and Karjalainen references through the filing date of April 28, 2003 for the Provisional Application. Such filing constitutes a constructive reduction to practice. Accordingly, the Declaration establishes the requisite conception and due diligence from a time prior to the effective date to the subsequent constructive reduction to practice that resulted from filing of the Provisional Application. The Provisional Application supports the claims of the subject application as demonstrated by the comparative table below, which addresses independent claims 1, 5, 10, 18, 26, and 32 followed by representative dependent claims:

Claim No.	Provisional Application Reference
1	p. 62, 2 nd paragraph
5	p. 62, 3 rd paragraph
10	pp. 28-30
18	P. 61, 4 th paragraph
26	p. 61, 3 rd paragraph
32	paragraph bridging pp. 61 and 62, p. 19, 1 st paragraph
6, 9, 11, 12, 14, 19, 20, 22, 23, 27, 28, 31	p. 62, 2 nd paragraph
2, 13, 17, 21, 25, 31	pp. 62-63, bridging paragraph
3, 7, 15, 24, 29	p. 63, last paragraph, p. 22, 1 st paragraph
4, 8, 16, 30	pp. 28-30
33, 35	pp. 61-62, bridging paragraph

It should be appreciated that this table is merely exemplary and is not intended to be exclusive or restrictive as to the claim support provided in the Provisional Application. The subject application was filed within one year of the Provisional Application. Therefore, it is respectfully submitted that the Kantor and Karjalainen have been

overcome in accordance with 37 CFR 1.131. In addition to this prior invention, further reasons support allowance of the claims as set forth in the following comments.

Rejections over Kantor

Claims 1-16, 18-24, 26-30, and 32-35 were rejected under 35 USC §102(e) as being anticipated by Kantor and claims 17, 25, and 31 were rejected under 35 USC § 103(a) as being unpatentable over Kantor. Kantor discloses that

[RT60] values may be determined in a wide variety of ways including the use of mathematical models like the Sabine equation that is based on environment geometry and acoustical properties of reflective surfaces within the environment. Another mathematical model comprises a set of leaky integrators in which each integrator represents energy storage characteristics of the listening environment 40 for a range of frequencies. Other techniques are empirical and use signal processing to measure reverberation times in a particular environment. The way in which the values are determined may affect the accuracy of those values, which in turn may affect system performance.

Anticipation under 35 U.S.C. § 102(e) requires that each and every element as set forth in a claim is found, either expressly or inherently described, in a single prior art reference. The features of claim 1 include generating data with the sensor signal in accordance with a maximum likelihood estimator; and filtering the data with an order-statistics filter to provide an estimate of reverberation time. Kantor fails to disclose, teach, or suggest such features

Kantor discloses deriving a relative acoustic energy Decay Spectrum (RADS) by using estimates of the reverberation time. Kantor, Abstract. The RADS is then used to model perceived timbre and to compensate for any deviations from some set of reference values. The Office Action states that paragraphs 0058-0062 of Kantor disclose filtering the data with an order-statistics filter to provide an estimate of reverberation time.

However, these paragraphs disclose only a way to model perceived timbre. This determination of perceived timbre requires a reverberation time value to already be calculated and therefore fails to disclose using a filter to select the estimate of reverberation time. Additionally, the determination of reverberation time in Kantor does not include disclosure of generating data in accordance with a maximum likelihood estimator and then providing the reverberation time estimate by filtering the data through an order-statistics filter for selecting the estimate of reverberation time.

Further reasons also support novelty and nonobviousness of rejected independent claims 5, 10, and 32. For example, while differing from one another in other patentable ways, each of claims 5, 10, and 32 include the features of using a maximum likelihood function to determine a reverberation time. Giving such terminology its broadest reasonable meaning, Kantor fails to disclose such features.

Additional reasons support novelty and nonobviousness of the rejected independent claim 18. For example, claim 18 includes estimations each being determined as a function of a different one of the sequences in accordance with a parameter estimator; and filtering the estimations with an order-statistics filter. The Office Action appears to rely on paragraphs 0058-0062 of Kantor as disclosing these features; however, these paragraphs disclose only a way to model perceived timbre. This determination of perceived timbre requires a reverberation time value to already be calculated.

In another instance, the features of independent claim 26 include a processing subsystem operable to receive sound-representative signals from the sensor to determine a reverberation time estimate of an unknown acoustic environment by processing the

signals with a parameter estimator and order-statistics filter. Giving such terminology its broadest reasonable meaning, Kantor does not anticipate claim 26. For at least the reasons stated for claim 1, Kantor does not disclose processing signals with a parameter estimator and an order-statistics filter to determine reverberation time.

Rejections over Karjalainen

Claims 1-16, 18-24, and 26-30 were rejected under 35 USC §102(e) as being anticipated by Karjalainen and claims 17, 25, and 31 were rejected under 35 USC § 103(a) as being unpatentable over Karjalainen.

In addition to the 131 Declaration, further reasons support novelty and nonobviousness of rejected claim 1. The features of independent claim 1 include generating data with the sensor signal in accordance with a maximum likelihood estimator; and filtering the data with an order-statistics filter to provide an estimate of reverberation time. Karjalainen fails to disclose, teach or suggest such features.

The Office Action States that paragraphs [0066]-[0069] of Karjalainen disclose filtering the data with an order-statistics filter to provide an estimate of reverberation time. However, these paragraphs disclose determining the optimum value of a coefficient defining the decay rate found by least-squares fitting the decay+noise model to the measured time series of values obtained with a short-term Fourier transform measurement -- no order statistics filter is disclosed. Additionally, Karjalainen does not disclose generating data in accordance with a maximum likelihood estimator.

Further reasons support novelty and nonobviousness of rejected independent claims 5 and 10. For example, while differing from one another in other patentable ways, each of claims 5 and 10 include the features of using a maximum likelihood function to

determine a reverberation time. For at least the reasons discussed above for claim 1 and giving such terminology its broadest reasonable meaning, Karjalainen does not disclose a maximum likelihood function.

Additional reasons support novelty and nonobviousness of the rejected independent claim 18. For example, claim 18 includes the features of estimations each being determined as a function of a different one of the sequences in accordance with a parameter estimator; and filtering the estimations with an order-statistics filter. As discussed above, the Office Action appears to rely on paragraphs [0066]-[0069] of Karjalainen as disclosing these features; however, these paragraphs disclose determining the optimum value of a coefficient defining the decay rate are found by least-squares fitting the decay+noise model to the measured time series of values obtained with a short-term Fourier transform measurement.

In another instance, the features of independent claim 26 include a processing subsystem operable to receive sound-representative signals from the sensor to determine a reverberation time estimate of an unknown acoustic environment by processing the signals with a parameter estimator and order-statistics filter. Giving such terminology its broadest reasonable meaning, Karjalainen does not anticipate claim 26. For at least the reasons stated above for claim 1, Karjalainen fails to disclose processing signals with a parameter estimator and an order-statistics filter to determine reverberation time.

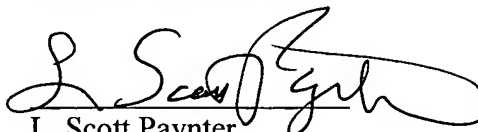
At least the same reasons supporting allowance of the independent claims also support allowance of the dependent claims. By way of non-limiting example, claims 20, 21, and 28 are rejected with the assertion that “all elements” are “comprehended” by a claim from which it depends. As best understood, elements being “comprehended” are

not the appropriate standard. In fact, each of these claims adds features not recited in the claim from which it depends. Such additional features seem to be ignored in the Office Action. In another example, it is asserted paragraph 24 on page 2 of Kantor somehow discloses a computer network among other things. A careful reading of this passage fails to disclose, teach, or suggest such features. Numerous other additional reasons support the patentability of other rejected dependent claims, but are omitted for the sake of brevity at this point.

Conclusions

In view of the forgoing, it is believed that claims 1-35 are in condition for allowance. Reconsideration of the present application is respectfully requested. The Examiner is invited to contact the undersigned by telephone to address any outstanding matters concerning the present application.

Respectfully submitted:

A handwritten signature in black ink, appearing to read "L. Scott Paynter", written over a horizontal line.

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